

Claims.

1.- Machine with an improved bearing lubrication, which machine mainly consists of a housing (2) and a rotor (5) which is provided on a shaft (6), provided in a rotatable  
5 manner in the above-mentioned housing (2) by means of oil-lubricated bearings (7), whereby, inside the housing (2), lubrication ducts (14) are provided to supply and discharge oil to and from the bearings (7), characterised in that it is provided with cooling channels (21-15) to  
10 supply and discharge a cooling agent, which cooling channels (21-15) open opposite to the shaft (6), in a place between the rotor (5) and an above-mentioned bearing (7).

2.- Machine with an improved bearing lubrication  
15 according to claim 1, characterised in that the rotor (5) on the above-mentioned place opposite to the cooling channels (21-15) is provided with one or several grooves (22).

3.- Machine with an improved bearing lubrication  
20 according to claim 2, characterised in that the cooling channels (21-15) extend through a gasket (18), provided on both sides of the above-mentioned grooves (22) of sealing lips (20) directed towards the shaft (6).

- 4.- Machine with an improved bearing lubrication according to claim 3, characterised in that the clearance between the above-mentioned sealing lips (20) and the shaft (6) is very small.
- 5 5.- Machine with an improved bearing lubrication according to claim 3, characterised in that the above-mentioned cooling channels (21-15) open between the above-mentioned sealing lips (20).
- 10 6.- Machine with an improved bearing lubrication according to claim 5, characterised in that the above-mentioned cooling channels (21-15) are tangentially directed onto the shaft (6) at their outlet at the shaft (6).
- 15 7.- Machine with an improved bearing lubrication according to claim 6, characterised in that the cooling channels (21-15) are oriented such that they inject the cooling agent according to the sense of rotation of the shaft (6).
- 20 8.- Machine with an improved bearing lubrication according to claim 1, characterised in that the shaft (6) is provided with a thermal bridge (30) between the cooled part and the bearing.
- 25 9.- Machine with an improved bearing lubrication according to claim 8, characterised in that the shaft (6) is made of several parts, namely bearing-mounted parts (31) and non-bearing-mounted parts (32), whereby the

thermal bridge (30) is formed of a ring (33) made of a thermally insulating material, which is provided between the above-mentioned bearing-mounted and non-bearing-mounted parts (31 and 32) .

5 10.- Machine with an improved bearing lubrication according to claim 8, characterised in that the thermal bridge (30) is formed of a bush (34) made of a thermally insulating material, which is provided between the shaft (6) and the bearing (7).

10 11.- Machine with an improved bearing lubrication according to claim 1, characterised in that the above-mentioned cooling channels (21-15) are connected to the above-mentioned lubrication ducts (14) .

15 12.- Machine with an improved bearing lubrication according to claim 1, characterised in that the lubrication ducts (14) and the cooling channels (21-15) are provided in a bearing cap (4) which is part of the housing (2) .

20 13.- Machine with an improved bearing lubrication according to claim 12, characterised in that the above-mentioned bearing cap (4) is provided with a cooling.

25 14.- Machine with an improved bearing lubrication according to claim 13, characterised in that the lubrication ducts (14), the cooling channels (21-15) of the shaft (6) and the cooling channels (35) of the bearing cap (4) are connected to each other.

15.- Machine with an improved bearing lubrication according to claim 12, characterised in that, in case the machine is an electric motor (1) or generator, the winding heads (38) of the electric coils (37) are cased in a  
s heat-conducting material (39) which makes contact with the above-mentioned bearing cap (4).